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THE AFRICAN SPECIES OF THE GENUS *OLIGOMYRMEX* MAYR (HYMENOPTERA, FORMICIDAE)

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This paper is based on new species taken on the Central African Expedition of the American Museum of Natural History and also includes all species hitherto known of this genus in Africa.[2] The types of all new species are in the American Museum of Natural History collections.

OLIGOMYRMEX MAYR

Oligomyrmex Mayr, 1867, Tijdschr. v. Ent., vol. 10, p. 110.

"♀ *Solenopsidi* simillima differt solummodo clypeo mitico postice obtusangulo, antennis 9-articulatis, alarum cellula discoidali subrhomboidea" (Mayr).

Genotype: *Oligomyrmex concinnus* Mayr, 1867, Netherland Indies. (Female only and 4 mm. long.)

Distribution: Tropical, Palearctic.

As Mayr originally indicated, the genus differs from *Solenopsis* primarily in having the anterior clypeal margin obtusely angulate rather than bidentate and in having the antennae nine-segmented. His original figure is merely that of the antenna of *concinnus*, clearly showing the nine-segmented condition and the two-segmented club.

Mayr, having only the female caste, could not know, however, that the genus differs also from *Solenopsis* in having the worker

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caste strongly dimorphic, the maxima being a large-headed soldier. These and other generic characters may be summarized as follows:

WORKER: Small to minute ants with dimorphic workers, the maxima being a large-headed soldier. Soldier with elongate head more or less rectangular, frequently with a median ocellus and minute eyes; mandibles stout, strongly curved, short, meso-epinotal suture distinct, epinotal teeth feeble, declivous surface more or less carinate at each side. Minima with head of average size and blind; head largely ovate with occipital margin feebly or not impressed, mandibles falcate with few teeth, no antennal scrobes; meso-epinotal impression distinct, feeble or no development of epinotal teeth; integument usually smooth and shining, yellow to ferruginous. Both castes have antennae nine-segmented with two-segmented club; clypeus bicarinate, obtusely angulate anteriorly; petiole and postpetiole rounded above, the petiole with a ventral tooth.

FEMALE: Small, with nine-segmented antennae and forewings with one closed cubital cell.

MALE: Antennae 13-segmented.

Ants of the genus *Oligomyrmex, sensu stricto,* were not taken by the American Museum Congo expedition. Wheeler notes (1922, p. 687) that the smallest ant then known was *O. bruni* Forel of Ceylon, the worker being 0.8–0.9 mm. and the soldier 1.5 mm. in total length.

The African species are:

Oligomyrmex alluaudi Santschi, 1914
Oligomyrmex alluaudi var. *cataractae* Santschi, 1919
Oligomyrmex angolensis Santschi, 1914
Oligomyrmex angolensis subsp. *congolensis* Forel, 1916
Oligomyrmex arnoldi Forel, 1913
Oligomyrmex convexus, new species
Oligomyrmex donisthorpei, new species
Oligomyrmex erythraeus Emery, 1915
Oligomyrmex frontalis, new species
Oligomyrmex latro Santschi, 1937
Oligomyrmex santschii Weber, 1943
Oligomyrmex thoracicus, new species

Oligomyrmex alluaudi Santschi

Oligomyrmex alluaudi SANTSCHI, 1914, *in* Alluaud and Jeannel, Voyage . . . en Afrique Orientale (1911–1912), Résultats scientifiques, Hymenoptera, 2, Formicidae, Paris, pp. 81–82, fig. 9, soldier, worker.

SOLDIER (AFTER SANTSCHI): Length, 1.5–1.6 mm. Head rectangular, a fifth to a fourth longer than broad, sides parallel, scarcely a little convex, the occipital border feebly concave, the angles rounded and without trace of teeth; clypeus sloping abruptly, with two blunt carinae, each terminating anteriorly in a small tooth between which the surface is emarginate; mandibles five-toothed; eyes very small, indistinct, formed by a single ocellus at the anterior fifth of the head; antennal scapes slightly surpass the middle of the head, funicular segments 2 to 6 shorter than broad. Pronotum globose, mesonotum indistinct, the promesonotal suture little or not distinct; epinotal incisure profound, epinotum raised a little anteriorly and with the basal surface a little broader than long, declivous surface shorter and concave, carinate (?) on each side, superior angle with small teeth somewhat longer than broad and slightly raised. Petiolar node a little longer than high, the summit transverse and rounded. Postpetiolar node a little broader than the petiole, a little broader than long.

Head reticulate-punctate except at the sides; genae striate, shining, and without punctation; occiput smooth posteriorly; under surface with large, confluent facets (reticulations?). Thorax, except on the promesonotum, and sides of pedicel finely reticulate-punctate; mandibles, middle of clypeus, pedicel above, and gaster smooth and shining.

Pilosity very fine, irregular, thin; pubescence very abundant. Color dull yellow, head brown, more or less yellowish, with the anterior border black.

WORKER (AFTER SANTSCHI): Length, 0.8–1.0 mm. Head a little longer than broad, broader posteriorly with the posterior angles very rounded, very excavated posteriorly; mandibles five-toothed; eyes minute, situated at the anterior two-fifths of the head; antennal scape slightly surpasses the posterior third of the head. Promesonotum a little longer than broad, the anterior and lateral borders convex; shoulders blunt, the promesonotal suture absent, the meso-epinotal suture impressed; epinotum as in the soldier, the spines somewhat longer than a third the interval at their base. Anterior border of petiole a little concave; nodes of the same (soldier?) breadth.

Matte, with a greasy reflection; head and thorax reticulate-punctate, mandibles smooth, pedicel reticulate, smooth on the nodes. Pilosity as in soldier.

Entirely dull yellow.

TYPE LOCALITIES: Shimoni (coastal, near Tanganyika border) and Kijabe (2100 meters altitude), Kenya.

Oligomyrmex alluaudi var. cataractae Santschi

Oligomyrmex Alluaudi v. *Cataractae* SANTSCHI, 1919, Bull. Soc. Vaudoise Sci. Nat., vol. 52, p. 337.

SOLDIER (AFTER SANTSCHI): Differing from the type from Kilimandjaro by having the head slightly more narrowed, the clypeus a little shorter, and the postpetiole higher and thinner at the summit.

WORKER (AFTER SANTSCHI): Pronotum anteriorly smooth and shining (very sculptured in the type), the head narrower anteriorly, the first segment of the club more elongated. The mandibles have four teeth (the remainder as in the type).

TYPE LOCALITY: Victoria Falls, Rhodesia.

Oligomyrmex angolensis Santschi

Oligomyrmex angolensis SANTSCHI, 1914, Bol. Lab. Zool. Gen. Agr. Portici, vol. 8, pp. 358–360, fig. 21, worker, soldier. WHEELER, 1922, Bull. Amer. Mus. Nat. Hist., vol. 45, p. 881.

SOLDIER (AFTER SANTSCHI): Length, 0.9–1 mm. Head rectangular, a fourth longer than broad, with sides a little convex and occipital margin slightly emarginate; eyes of one facet, a little in front of the middle of the sides; clypeus bicarinate, emarginate in the middle of the anterior border, convex; scape slightly surpassing the middle of the head, antennal segments 3 to 7 slightly broader than long, the terminal segment as long as the six preceding when taken together; mandibles four-toothed. Promesonotum globose, a little longer than broad, with the promesonotal suture little distinct; metanotal suture very impressed; basal face (of epinotum) marginate, concave and enlarged behind, slightly longer than broad, terminating in two teeth as long as a fourth their interval, broad at their base; declivous face strongly marginate, concave. Petiole a little lower than long, the node rounded at the summit, almost twice as broad as long. Postpetiolar summit slightly broader than the petiole but only a fourth shorter than broad. Gaster short, emarginate at each side of the pedicel. Very near to *Oligomyrmex alluaudi* and *jeanneli*, but

the first has a shorter head and the second has the sculpture more smooth.

Mandibles, middle of the clypeus, occiput, meso-epinotum, summit of the nodes, and gaster smooth and shining; head and remainder of the thorax matte and punctate; head also densely and very finely striate longitudinally with the base of the striations more shining and less punctate in front of the cheeks and clypeus than behind; striations at the sides of the head more or less anastomosing. Pilosity of a few long hairs on the body and a pubescence distributed chiefly on the appendages and the head.

Reddish yellow, head more reddish, gaster brownish yellow, legs and antennae yellow.

WORKER (AFTER SANTSCHI): Length, 0.8 mm. Head a little longer than broad, longer than in *alluaudi* and less enlarged behind; the scape nearly attains the posterior fourth of the head; mandibles of four teeth. Thorax broad in front and more marginate than in *alluaudi;* basal face of the epinotum clearly broader than long, with the teeth moderate, somewhat broader at the base than long. Petiole a little longer than high and a little broader at the summit than in *alluaudi;* postpetiole rounded, narrower.

Head, epinotum, and sides of the petiole matte, densely and finely reticulate-punctate, the remainder smooth and shining.

Reddish yellow.

TYPE LOCALITY: Quifangondo, Angola.

Oligomyrmex angolensis subsp. **congolensis** Forel

Oligomyrmex angolensis r. *congolensis*, n. st. FOREL, 1916, Rev. Suisse Zool., vol. 24, p. 417.

SOLDIER (AFTER FOREL): Length, 1.4–1.5 mm. A little larger than the type, similar form of the head, but the latter has a very small carina on each side at the occiput. Clypeus strongly emarginate at the middle of the anterior border but without lateral carinae sketched and described by Santschi in the type. The extremity of the scape scarcely surpasses the middle of the head. Thorax scarcely as impressed. Epinotal teeth shorter than in those of the type, small and triangular. Head subopaque and densely striate anteriorly; rest of body shining and little sculptured. Dull, dirty yellow, head yellowish brown, antennae and legs yellow.

WORKER (AFTER FOREL): Length, 0.9 mm. Antennal scape attains the posterior fourth of the head; meso-epinotal suture a little deeper and epinotal teeth stronger than in the soldier. Petiole thicker and more rounded above than in the soldier, where its node appears higher and more compressed than in the type. Head matte, a little more reticulate and less striate than in the soldier. Uniformly yellow with a touch of russet except for yellow legs.

TYPE LOCALITY: Congo (Kohl).

Oligomyrmex arnoldi Forel

Oligomyrmex arnoldi FOREL, 1913, Ann. Soc. Ent. Belgique, vol. 57, pp. 123–124, worker.

WORKER (AFTER FOREL): Length, 1.9 mm. Head impressed, somewhat broader than long, occipital margin almost straight, sides a little convex; antennae nine-segmented, scapes short, not nearly attaining the occipital border; three mandibular teeth; meso-epinotal suture distinct; petiole distinctly broader than long; postpetiole one and one-half times broader than long and similarly broader than the petiole.

TYPE LOCALITY: Rhodesia.

Oligomyrmex convexus, new species

A species that is characterized in the soldier caste by the unusual convexity of the front of the head, the biconvexity of the occiput, and the presence of a pair of teeth; the head is reticulate-punctate.

SOLDIER: Extended length, about 1.5 mm.; of thorax, including neck, 0.46 mm. Head in front view, including mandibles, 0.50 mm. broad by 0.67 mm. long; occipital margin medially emarginate with a tooth on either side and with broadly rounded corners, sides convex, anterior clypeal margin produced as a lobe emarginate medially; eyes minute, situated at a level with the distal half of the scapes; median ocellus distinct, closer to the occipital teeth than the teeth are to one another; frontal lobes small and feebly convex; mandibles short, stout, triangular, highly convex, and with about five teeth; antennae nine-segmented, scapes 0.25 mm. long, clavate, bowed, two-segmented funicular club less than one and one-half times the length of the preceding funicular teeth taken together. Thorax from above with globose

pronotum 0.25 mm. broad which is over twice as broad as the basal surface of the epinotum; in side view with pronotum highly convex, the meso-epinotal suture distinct and the basal surface of the epinotum forming an obtuse angle with the declivous surface, the juncture being marked by obtuse teeth. Petiole in side view pedunculate, with node rounded above and rising at an angle. Postpetiole much lower than the petiole and, from above, of breadth similar to the petiolar node. Gaster elliptical and broadly excised anteriorly for the reception of the postpetiole, the corners rounded. Legs small and slender.

Shining; head reticulate-punctate, with reticulations becoming longitudinal striae near the frontal carinae; pronotum largely smooth above, sides of thorax and pedicel and entire epinotum punctate; gaster smooth. Pilosity of short, sparse, fine, upright hairs and a few longer, scattered hairs.

Yellowish brown with legs and antennae of similar color.

COTYPES: Soldiers and workers of one collection (no. 2080) taken February 17, 1948, at Busnia, Uganda, near the Kenya border.

Oligomyrmex donisthorpei, new species

A species characterized by the rectangular head of the soldier, which is slightly broader anteriorly, and by the absence of the median ocellus.

SOLDIER: Extended length, about 1.4 mm., of thorax, 0.45–0.49 mm. Head in front view rectangular, including mandibles, 0.40–0.45 mm. broad by 0.60 mm. long; occipital margin broadly excised medially and slightly carinate, corners rounded right angles, sides subparallel, being slightly broader anteriorly; anterior clypeal margin sinuate with two blunt angles formed by the frontal carinae, the space between concave and the carinae terminating at about the level of the antennal insertions; eyes minute at a level just posterior to the distal end of the scape when the latter is directed in that direction; no median ocellus; frontal lobes feebly developed, convex, not raised, diverging posteriorly; mandibles short, stout, triangular, highly convex, and with five teeth; antennae nine-segmented, scapes about 0.23 mm. long, clavate, slightly bowed, two-segmented club nearly twice as long as the remainder of the funicular segments taken together. Thorax from above with a short, convex, raised "neck," the remainder of the pronotum subcircular and fully twice as

broad as the epinotum; thorax in side view with evenly convex pronotum, slight meso-epinotal suture and plane basal surface of the epinotum which forms an obtuse angle with the declivous surface; epinotal declivity marginate on the sides and concave; no distinct epinotal teeth. Petiole in side view somewhat triangular, with node convex above and ventral surface slightly convex, posterior surface of node descending steeply. Postpetiole from above fully one-third broader than petiole, transversely elliptical; in side view lower than petiole, with convex dorsal surface and feebly convex ventral surface. Gaster in contracted state shorter than thorax and obtusely angulate at the anterolateral angles. Legs moderately short and slender.

Shining; head finely striate punctate, striae longitudinal and most distinct anteriorly, frontal area smooth; pronotum largely smooth, mesonotum and epinotum deeply punctate; pedicel, except nodes dorsally, punctate; gaster smooth. Pilosity of sparse, short, fine, recumbent hairs and a few longer and upright hairs especially at the clypeus, pronotum anteriorly, and gaster apically.

Yellowish brown, legs and antennal clubs brownish yellow.

WORKER: Extended length, 1.1 mm., of thorax, 0.26 mm. Head in front view, excluding mandibles, nearly one-fifth longer than broad, occipital margin faintly concave, corners broadly rounded, sides feebly convex and subparallel, anterior clypeal margin produced as a sinuate lobe over the base of the mandibles, paired clypeal carinae forming the most anterior convexities of the clypeus but not dentate; eyes minute, situated in front of the middle of the sides and well forward of the distal ends of the scapes; frontal lobes feebly developed and convex, not concealing the antennal insertions when viewed from in front; mandibles triangular, with an acute apical and about four much smaller teeth; antennae nine-segmented, scapes slender, failing to reach the occipital angles by more than half their lengths, two-segmented funicular club distinctly longer than the preceding funicular segments taken together. Thorax from above piriform; pronotum, excluding neck, transversely convex and more than one and one-half times broader than epinotum; in side view feebly and evenly convex above, the meso-epinotal suture barely indicated, basal surface of epinotum convex and terminating posteriorly in a pair of small, triangular teeth. Petiole in side view a triangle with node rounded above. Postpetiole much lower than petiole and rounded

dorsally but from above transversely elliptical and nearly two-thirds broader than the petiole. Gaster small and ovate. Legs of moderate proportions and length.

Sublucid; head, epinotum, pedicel, and meso-epinotal region with fine and dense piligerous punctations, pronotum and gaster nearly smooth. Pilosity of numerous short, recumbent hairs on the head, with the body generally with sparser pilosity; a few longer and more upright hairs chiefly on the clypeal region, the thorax anteriorly at the apex of the gaster.

Yellowish brown with antennae and legs paler.

COTYPES: Soldiers and workers (no. 2188) taken March 6, 1948, at Djema, Haut Mbomu, Ubangi-Shari, French Equatorial Africa. Dedicated to my esteemed colleague, Mr. Donisthorpe.

Oligomyrmex erythraeus Emery

Oligomyrmex erythraeus EMERY, 1915, Bol. Lab. Zool. Gen. Agr. Portici, vol. 10, pp. 14–15, fig. 7, worker, soldier. WHEELER, 1922, Bull. Amer. Mus. Nat. Hist., vol. 45, p. 882.

SOLDIER (AFTER EMERY): Length, 1.6–1.8 mm.; excluding gaster, 1.3 mm.; head, excluding mandibles, 0.6 by 0.4 mm.; scape 0.22 mm. Head one and one-half times longer than broad, the sides almost parallel, concave behind, occiput with a fine carina terminating at each side in a tooth which is particularly visible in profile; eyes of a single facet; clypeus projecting anteriorly but not dentate; frontal groove very short and not prolonged to the fossa which represents the rudiment of the unpaired ocellus; mandibles fine toothed; scape attaining about the middle of the length of the head; funicular segments 2 to 6 about half as long as broad. Thorax dorsally scarcely impressed at the meso-epinotal suture; declivous surface of epinotum with a membranous lamella at each side.

Head and promesonotum shining, sculptured with piligerous punctations and head with longitudinal striations; sides of thorax, epinotum, and nodes thickly punctate, opaque. Pilosity short and copious.

Yellow, head light brown.

WORKER (AFTER EMERY): Length, 0.9 mm.; head, excluding mandibles, 0.34 by 0.29 mm., being a little longer than broad, a little broader behind than in front and lacking the occipital carina and teeth. Thorax and pedicel as in the soldier except for smaller nodes.

Sculpturing as in the soldier, but only the cheeks striate.
Color as in the soldier, the head more yellow.
TYPE LOCALITY: Ghinda, Eritrea.

Oligomyrmex frontalis, new species figs. 5, 6, 8.

A species characterized in the soldier caste by the large, dentate frontal lobes which are outwardly directed.

SOLDIER: Extended length, 1.9 mm.; of thorax, excluding neck, 0.50 mm. Head in front view rectangular; including mandibles, 0.48 mm. broad by 0.73 mm. long, occipital margin emarginate and bordered except at the emargination by a carina on each side which is dentate in profile, corners broadly rounded, sides subparallel, feebly convex, anterior clypeal margin produced as a sinuate lobe which is emarginate medially; frontal lobes in the form of large, obtusely angulate, triangular lobes which curve upward and outward, completely concealing antennae insertions; frontal carinae as long as the scapes, continued backward as widely spaced, slightly convergent carinae terminating in the posterior half of the head; eyes minute and situated at a level near the distal end of the scapes; median ocellus distinct; mandibles short, stout, triangular, highly convex, and with about five short, blunt teeth; antennae nine-segmented, scapes carinate, clavate, strongly bowed, terminal funicular segment about as long as the preceding funicular segments taken together. Thorax from above piriform, the pronotum globose and over twice as broad as the basal surface of the epinotum; in side view with pronotum highly convex, a broad and well-marked meso-epinotal impression and an epinotum with basal and declivous surfaces meeting at an obtuse angle with a small tooth between. Mesonotal region with sutures and a tubercle above, suggesting vestiges of wings. Nodes of pedicel from above transversely elliptical, the postpetiole about one-third broader than the petiole; in side view the petiole triangular, with slightly concave anterior surface and rounded dorsum, postpetiole much lower. Gaster ovate, with anterior margin concave and corners obtusely angulate. Legs small and slender.

Sublucid; head densely reticulate-punctate, with reticulations becoming longitudinal striae anteriorly, pronotum reticulate-punctate, the epinotum more coarsely and deeply punctate; pedicel mostly smooth above, punctate below, gaster smooth.

Pilosity of fine, short, mostly raised hairs with scattered longer hairs especially anteriorly and on the dorsal surface of the trunk.

Brownish yellow, gaster and mandibles darker.

WORKER: Extended length, about 1.1 mm.; of thorax, excluding neck, 0.40 mm.; including neck, 0.45 mm. Head, including closed mandibles, less than one and one-fifth times longer than broad; occipital margin concave, sides feebly convex and converging anteriorly, anterior clypeal margin produced as a truncate lobe and with terminations of the clypeal carinae feebly indicated; frontal lobes feeble and convex, the antennal insertions exposed; eyes minute and at the anterior half of the sides; mandibles with fine acute teeth, narrow and triangular; antennae nine-segmented, scapes long and slender, failing to reach the occipital corners by less than half their length, terminal segment about as long as the preceding funicular segments taken together. Thorax from above with pronotum convex and about twice as broad as the basal surface of the epinotum; in side view with pronotum convex, meso-epinotal suture acutely marked, and basal surface of epinotum convex, epinotal spines short and triangular, declivous surface carinate on the sides. Postpetiole about one and one-half times as broad as petiole and transversely elliptical.

Sublucid; densely punctate except on gaster and pronotum and nodes dorsally, faint reticulations and striae on head. Pilosity of sparse, fine hairs.

Brownish yellow; callows a dirty yellow with infuscated mandibular teeth.

COTYPES: Soldiers, workers, and brood (no. 2132) of a colony taken 78 miles north of Beni in the Ituri Forest of the Belgian Congo.

Oligomyrmex latro Santschi

Oligomyrmex (*O.*) *latro* SANTSCHI, 1937, Rev. Zool. Bot. Africaines, vol. 30, pp. 81–82, fig. 6, soldier, worker.

SOLDIER (AFTER SANTSCHI): Length, 2.1 mm.; head elongated, 0.8 mm., rectangular, one-fifth to one-sixth longer than broad, the sides feebly convex, nearly straight at the anterior half, occipital margin emarginate without carinae; middle third of the clypeus with feeble carinae; mandibles with five teeth; eyes rudimentary and situated at the anterior two-fifths of the head; antennal scape slightly surpasses the middle of the head; funic-

ular segments 2 to 6 broader than long, the seventh one-fourth longer than broad and a third the length of the last segment. Promesonotum convex, the mesonotum posteriorly in the same plane as the basal surface of the epinotum and (separated by) a deep metanotal impression in which appears a membranous band; subdentate with two points. Petiole as broad in front as the epinotum, one-fourth to one-fifth longer, with its peduncle, than broad, the node above twice as broad as long. Postpetiolar node transversely oval, one to two-thirds broader than the petiole and more than twice as broad as long.

Head longitudinally striate above and very shining, the striae showing mostly on the anterior third or fourth and becoming very fine elsewhere, the striae lacking on a smooth and shining band extending from the middle of the clypeus to the position of the median ocellus; mandibles smooth; with a fine piligerous punctation, very abundant everywhere except on the temples; epinotum finely reticulate, sub-matte, the remainder smooth and shining. Pilosity very short, erect, fine, and abundant everywhere, more oblique on the legs.

WORKER (AFTER SANTSCHI): Length, 1–1.1 mm. Head one-eighth longer than broad, the sides not convex (?), occipital border feebly concave; antennal scape attaining the posterior fourth of the head, the club much better developed than in the soldier. Metanotal groove more feebly developed; pedicel proportionally as broad as in the soldier. The rest similar.

A few short striae on the cheeks; epinotum and mesosternum reticulate, punctate as in the soldier, the remainder smooth and shining with the same piligerous punctation.

Color of the soldier with the head lighter.

TYPE LOCALITY: Eala, Belgian Congo.

Oligomyrmex santschii Weber

Oligomyrmex santschii WEBER, 1943, Bull. Mus. Comp. Zool. Harvard Coll., vol. 93, pp. 363–364, pl. 15, figs. 4, 16, worker, soldier.

SOLDIER: Length fully extended, 1.7 mm. (of thorax, 0.41 mm). Head in front view with closed mandibles, 0.66 mm. long by 0.40 mm. wide. Eyes minute, mandibles five-toothed, antennae nine-jointed, a median ocellus in middle of head. Thorax from above with promesonotum globular in outline and 0.24 mm. broad; basal surface of epinotum 0.11 mm. broad, concave

between lateral carinae. Petiole from above twice as thick through node as through peduncle. Postpetiole from above distinctly broader than petiole and transversely elliptical. Gaster small and ovate. Legs short, femora and tibiae inflated.

Head in front view densely punctate, closely striate except for the smooth bicarinate clypeus and frons and merely punctate occipital corners, the corners bearing also a transverse carina; occiput striate-punctate; sides of head posteriorly shining, sparsely punctate; mandibles smooth. Thorax and pedicel densely punctate, especially laterally and on epinotum, promesonotum also striate above; dorsum of petiolar and postpetiolar nodes shining, sparsely punctate; gaster shining, with piligerous punctations. Pilosity of moderately abundant, fine, yellowish, short, reclinate hairs covering body generally, and a few longer and coarser curved hairs chiefly on thorax. Light ferruginous, appendages paler.

WORKER: Length fully extended, 1.03–1.06 mm. (of thorax, 0.30 mm.), length in straight line as they crawl, 0.55–0.64 mm. Head in front view, including closed mandibles, 0.37 mm. long by 0.26 mm. wide. Eyes minute, mandibles five-toothed, antennae nine-jointed. Meso-epinotal suture faint, epinotal teeth distinct, acute, triangular. Postpetiole slightly less than twice as broad as petiole.

Head, thorax, and pedicel densely and coarsely punctate; clypeus bicarinate, frons of head and mandibles smooth and shining, gaster with piligerous punctations. Pilosity of moderately abundant, short, fine, and reclinate hairs with a few scattered much longer, coarser, and curved hairs chiefly on thorax and gaster. Pale ferruginous.

Near *Oligomyrmex jeanneli* Santschi and of comparable size in soldier and worker, but *jeanneli* soldier has 10-jointed antennae, nothing is said in the description about pre-occipital carinae, and the epinotum is unarmed. The worker *jeanneli* has mandibles four-toothed, head finely striolate, epinotum unarmed, and is in other ways different.

TYPE LOCALITY: Khor Aba on the Nile-Congo watershed south of Yei, Anglo-Egyptian Sudan.

Oligomyrmex thoracicus, new species fig 11, 14, 15

A species characterized by the rectangular head of the soldier,

bearing occipital carinae, and by the irregularities of the meso-metanotal area of the thorax, suggesting the female caste.

SOLDIER: Length extended, 2 mm.; of thorax, 0.63–0.67 mm. Head in front view rectangular, including mandibles, 0.55–0.58 mm. broad by 0.84–0.91 mm. long; occipital margin broadly impressed medially, corners rounded, each side of occiput with a pre-occipital carina occupying most of that side; sides subparallel, being slightly broader posteriorly; anterior clypeal margin sinuate, lacking teeth but emarginate medially, the clypeus with a pair of low carinae converging posteriorly; eyes minute, convex, situated at a level just behind the middle of the scapes; a single median ocellus of nearly the same size occurs at the posterior end of a groove extending back from the fossa of the frontal area; frontal lobes small, convex, not raised, diverging posteriorly; mandibles short, triangular, highly convex, and with fine, stout, acute teeth; antennae nine-segmented, scapes bowed, feebly clavate, funiculus with a two-segmented club whose penultimate segment is less than one-third the length of the terminal segment, the two taken together longer than the funiculus. Thorax from above with a short, convex, raised "neck," the remainder of the pronotum forming a rounded gibbosity slightly broader than long, meso-epinotal region about one-third breadth of pronotum; thorax in side view with pronotum rising steeply to a broad convexity, thence descending quite evenly to the slight meso-epinotal impression; epinotum from above with a pair of broadly divergent, triangular teeth, with even concavity between; epinotum in side view rising slightly from the meso-epinotal impression, basal and declivous surfaces forming a broadly obtuse angle. Thorax in the meso-metanotal region with irregularities suggesting the female thorax, including apparent wing vestiges. Petiole from above with thin, transverse node rising steeply; in side view the node forms a slightly acute summit to the triangular petiole, the ventral surface largely plane and terminating anteriorly in a minute tooth. Postpetiole from above with transversely elliptical node which is about twice as long as that of the petiole and about one-fifth wider; in side view evenly convex above and distinctly less high than the petiole. Gaster in contracted state about as long as the thorax, ovate, impressed medially to receive the postpetiole and with rounded, obtuse, anterolateral angles. Legs small and slender.

Shining; head finely striate-punctate, the striae tending to

thin out towards the occiput and sides posteriorly; mandibles smooth except for piligerous punctations and striae at the base. Thorax, epinotum, and pedicel densely and more coarsely punctate except for dorsal surfaces of pronotum and pedicel which are largely smooth; gaster smooth but for piligerous punctations. Pilosity of fine, reclinate, and scattered hairs generally distributed and much longer and more upright hairs which tend to occur in clusters in the clypeal and pronotal regions, on the nodes of the pedicel and at the gaster distally.

Bright ferruginous with funiculi and legs brownish yellow.

WORKER: Extended length, 1.0–1.2 mm.; of thorax, 0.37–0.40 mm. Head in front view with mandibles closed, 0.32–0.36 mm. wide, by 0.40–0.42 mm. long, length to anterior clypeal margin, 0.36–0.37 mm.; occipital margin truncate, broadly and feebly impressed; sides evenly convex; anterior clypeal margin produced as a truncate lobe with a pair of low carinae converging posteriorly between the frontal lobes; eyes minute, convex, situated at a level behind the middle of the scapes; mandibles triangular, five-toothed, the apical tooth distinctly the longest and acute; antennae nine-segmented, scapes long and slender, extending about two-thirds the distance to the occiput, funiculus with a two-segmented club much longer than the remainder of the segments taken together. Thorax from above with well-developed "neck" from which the remainder of the pronotum rises steeply, this latter margin anteriorly being evenly convex, the pronotal sides also convex and converging posteriorly, basal surface of epinotum about half as wide as pronotum; thorax in side view with pronotum rising anteriorly as a sharp convexity and descending gradually to the small but distinct meso-epinotal suture; basal surface of epinotum continuing smoothly to feeble epinotal teeth; declivous surface concave and carinate on each side. Petiole short and high, with convex node, and convex ventral surface terminating anteriorly as a minute tooth. Postpetiole lower but with elliptical node which from above is longer and about twice as broad. Gaster ovate and shorter than thorax with epinotum. Legs moderately long and slender.

Shining; head smooth but for piligerous punctations and a few short striae anteriorly; pronotum above smooth; epinotum densely and coarsely punctate, pedicel less markedly punctate; gaster smooth. Pilosity of fine, short, reclinate hairs and scat-

tered, much longer hairs, especially in the clypeal area, on the thorax and on the gaster posteriorly.

Yellowish brown, the head and gaster medially darker; legs and funiculi brownish yellow.

COTYPES: Soldiers and workers of a colony (no. 2083) taken February 17, 1948, just within Uganda at Busnia on the Kenya-Uganda border.

Oligomyrmex erythraeus is a closely related species whose soldier and worker measurements as given by Emery are smaller in all dimensions. The soldier head of *erythraeus* has sides straight to concave and a dorsal surface similar; its petiolar node is also thicker above; the worker differs in head and pedicel proportions.

BIOLOGY

A large clay termitarium (*Macrotermes natalensis?*) on the game plains of Kenya close to the Tanganyika border (latitude 1° 25′ S., longitude 35° 10′ E.) was the site of a colony from which soldiers were taken on several occasions in January and February, 1948. The ants were found near the base on a side shaded by nearby bushes and low trees. Mostly they were in the top 2 or 3 cm. of soil, under leaves, and doubtless had chambers extending much deeper into the base. The type colony at Busnia, just within Uganda on the Kenya frontier, nested in rotted wood at the base of a tree. The tree with a few bushes constituted an uncultivated island in a banana plantation. The rotted wood fragments were buried under a loose cover of fallen leaves and humus, creating high and stable relative humidity conditions. Tunnels 0.7 mm. in diameter perforated the wood and connected cells in which the ants had their brood. One cell was about 6 mm. in diameter, and its walls were brownish in color, contrasting slightly with the more reddish untouched wood. There was no evidence of mold on the walls, however, and the color may have been due to the excretions of the ants. The 6-mm. cell contained worker and female pupae, the latter being 3.3 mm. in length, and a few larvae which could have been only female, being 1.8–2.3 mm. long. Early worker pupae were enclosed in the larval skin, the latter being 0.9 mm. long. The female larvae were as plump as those of *Atta*, one 1.8 mm. long having an abdominal diameter of 1.1 mm. and a head capsule of 0.25 mm. situated completely on the ventral side; no hairs were apparent. Worker larval skins on the other hand were covered with short hairs,

bifurcate or trifurcate apically. In the small sample of the colony that was collected, the 6-mm. cell, there were seven soldiers and 16 workers. Additional specimens were taken in the vicinity. These would markedly lower the proportion of soldiers to not more than one in 10 or 20 and perhaps to as little as one in 50.

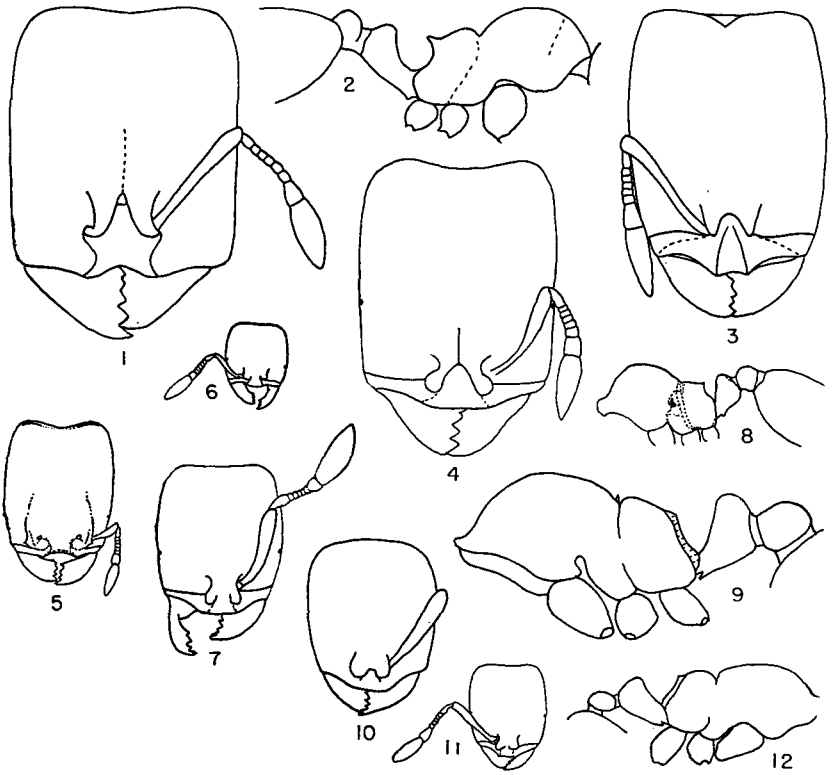


FIG. 1. Outline of head of soldier of *Oligomyrmex alluaudi* Santschi (after Santschi, 1914).

FIG. 2. Outline of thorax and abdomen of soldier of *Oligomyrmex angolensis* Santschi (after Santschi, 1914).

FIG. 3. Outline of head of soldier of *Oligomyrmex angolensis* Santschi (after Santschi, 1914).

FIG. 4. Outline of head of soldier of *Oligomyrmex latro* Santschi (after Santschi, 1937).

FIG. 5. Outline of head of soldier of *Oligomyrmex frontalis*, new species.

FIG. 6. Outline of head of worker of *Oligomyrmex frontalis*, new species.

FIG. 7. Outline of head of worker of *Oligomyrmex latro* Santschi (after Santschi, 1937).

FIG. 8. Outline of thorax and abdomen of soldier of *Oligomyrmex frontalis*, new species.

FIG. 9. Outline of thorax and abdomen of soldier of *Oligomyrmex latro* Santschi (after Santschi, 1937).

FIG. 10. Outline of head of worker of *Oligomyrmex erythraeus* Emery (after Emery, 1915).

FIG. 11. Outline of head of worker of *Oligomyrmex thoracicus*, new species.

FIG. 12. Outline of thorax and abdomen of worker of *Oligomyrmex latro* Santschi (after Santschi, 1937).

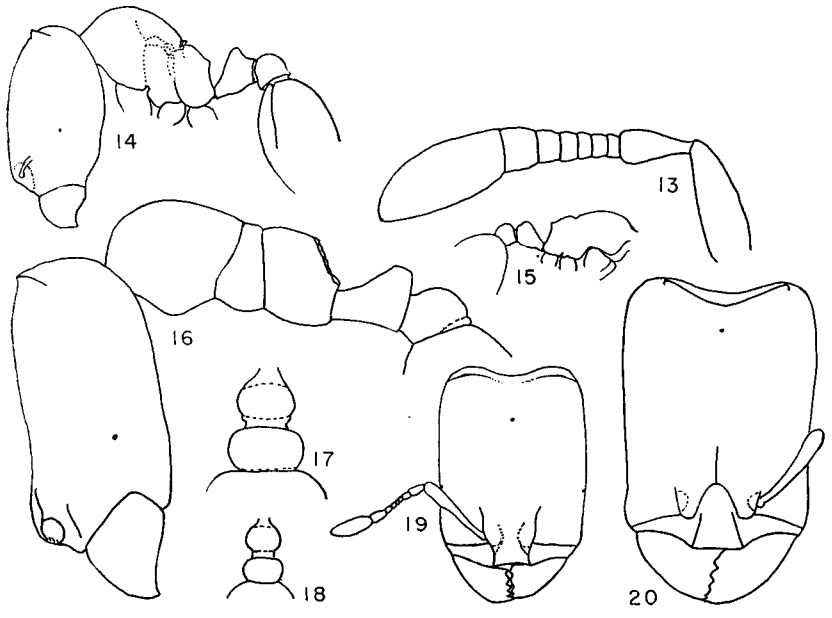


FIG. 13. Outline of antenna of soldier of *Oligomyrmex latro* Santschi (after Santschi, 1937).

FIG. 14. Outline of body of soldier of *Oligomyrmex thoracicus*, new species.

FIG. 15. Outline of thorax and abdomen of worker of *Oligomyrmex thoracicus*, new species.

FIG. 16. Outline of body of soldier of *Oligomyrmex erythraeus* Emery (after Emery, 1915).

FIG. 17. Outline of pedicel from above of soldier of *Oligomyrmex erythraeus*, Emery (after Emery, 1915).

FIG. 18. Outline of pedicel from above of worker of *Oligomyrmex erythraeus* Emery (after Emery, 1915).

FIG. 19. Outline of head of soldier of *Oligomyrmex thoracicus*, new species.

FIG. 20. Outline of head of soldier of *Oligomyrmex erythraeus* Emery (after Emery, 1915).